

Applicants have amended their claims in order to clarify various aspects of the present invention, so as to simplify prosecution in connection with the presently claimed application. Specifically, Applicants have canceled claims 1-8 and 55-60 without prejudice or disclaimer; and have incorporated the subject matter of claim 22 into claim 9, and, correspondingly, have canceled claim 22 without prejudice or disclaimer.

Applicants have further amended claim 9 to recite the first and second segments "having been", rather than being, at least partially split from each other. Applicants have respectively amended claims 12 and 15 to recite "non-woven" fabric and "multi-component" fibers. In addition, noting amendment of claim 9 to recite that the first and second segments have been at least partially split, claim 20 has been amended to recite that the second segments "have been" completely split from the first segments. In light of incorporation of subject matter of claim 22 into claim 9, dependency of claim 23 has been amended. Claim 29 has been amended to clarify that the second polymer material can be a copolymer of polyethylene terephthalate, or a polyamide. Moreover, claim 30 has been amended to recite that the second polymer material, of the second segments, "has been melted" and is concentrated at the cross-over points.

Applicants have added new claims 61-72 to the application, to further clarify and define various aspects of the present invention. Of these newly added claims, which are

all directed to fiber-containing material, claim 67 is the sole newly added independent claim. Claim 67 recites fiber-containing material made by specified processing steps, which are set forth in claim 32.

Of the other newly added claims, claims 68-72 are dependent ultimately on claim 67. Claims 68 and 69, each dependent on claim 67, respectively recite subject matter set forth in claims 52 and 49, of the original claims in the above-identified application. Claim 70, also dependent on claim 67, recites subject matter expressly set forth in claim 47 of the above-identified application; and claim 71, dependent on claim 70, recites that after the thermal bonding the second polymer material of the second segments is substantially only at the cross-over points (note claim 48, of the claims originally in the present application). Claim 72, dependent on claim 67, recites subject matter expressly set forth in claim 44 of the above-identified application.

It is again noted that claims 67-72 are directed to fiber-containing material, these claims being defined in terms of the process by which the material was formed. It is respectfully submitted that the fiber-containing material of claims 67-72 are directed to the elected invention, and are to be considered on the merits in the present application.

In addition to the newly added claims discussed previously, claims 61-66 are also being added to the application. Claims 61 and 62, each dependent on claim 9, respectively recites that the second polymer material, of the second segments, is evenly dispersed through the fiber-

containing material, at the cross-over points of the first segments; and recites that the second polymer material, of the second segments, substantially encapsulates the cross-over points and is substantially only at the cross-over points. Claims 63 and 64, dependent respectively on claims 9 and 63, respectively recites that the segments have been at least partially split from each other prior to the second segments having been melted, and recites that the first and second segments have been at least partially split by differential shrinkage of the first and second polymer materials. Claims 65 and 66, each dependent on claim 9, respectively recites that the first polymer material, of the first segments, has not been melted, in the fiber-containing material; and recites that the difference in melt temperature between the first and second polymer materials is in the range of 10°-250°C.

In connection with the newly added claims, note, for example, the paragraph bridging pages 8 and 9, the second full paragraph on page 11, the paragraph bridging pages 19 and 20, and the sole full paragraph on page 21, of Applicants' specification.

The restriction requirement on pages 2 and 3 of the Office Action mailed February 14, 2001, is noted. Applicants respectfully affirm their election of the Group I claims, claims 1-31, drawn to a multi-component fiber and fabric made therefrom. This election is made with traverse, with respect to claims 55-60. That is, it is respectfully submitted that the product-by-process claims 55-60 as in the application as originally filed, should have been grouped with the Group I

*Claims
Cancelled*

claims, and that newly submitted product-by-process claims 67-72, should be examined with the Group I claims.

In the restriction requirement set forth on page 2 of the Office Action mailed February 14, 2001, claims 55-60, the product-by-process claims, are not listed; however, in the Office Action Summary, it is indicated that claims 55-60 are withdrawn from consideration. As is clear in Manual of Patent Examining Procedure 806.05(f), a product defined by the process by which it can be made is still a product claim, the section of the Manual referring to In re Bridgeford, 149 USPQ 55 (CCPA 1966). Clearly, present claims 67-72, should be considered on the merits in the present application, as being directed to the elected Group of the claims, i.e., directed, inter alia, to the fiber-containing material.

Applicants respectfully traverse the rejection of their claims under the first paragraph of 35 USC 112, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In particular, Applicants traverse the conclusion by the Examiner that Applicants do not "clearly describe how the second segment polymer can concentrate at the cross-over points". As is clear from Applicants' specification as originally filed, the second polymer material is at least partially split, providing segments of low melt temperature polymer and segments of high melt temperature polymer, there being cross-over points of the high melt temperature polymer. The low melt temperature polymer is

melted and flows to the cross-over points, the high melt temperature polymer retaining its fiber shape. Note Figs. 9 and 10. As described in Applicants' specification at page 8, lines 5-12, according to an aspect of the present invention:

[T]he second polymer material is melted without melting the first polymer material of the first segments. Thus, the first segments maintain the structure as, e.g., micro-fibers. The second polymer material, of the second segments, encapsulating cross-over points of the first segments with each other, binds the first segments (and, accordingly, binds the fiber-containing material).

Note also the following description in the paragraph bridging pages 8 and 9 of Applicants' specification:

Additionally, complete melting of the second segments, which concentrates the adhesive (polymer material of the second segments) at the cross-over points of the first segments, results in individual bond strengths that are higher than strengths achieved by merely softening (tackifying) the adhesive fibers without melting them. [T]hermal bonding of the web can easily effected by melting and solidifying the binder fibers.

Note further the description in Applicants' specification with respect to the background of the present invention, in particular the structures shown in Figs. 1 and 2a, wherein the adhesive sheath 5 of binder fiber 1 has been softened (tackified) but not melted ("in particular, has not melted sufficiently to flow and encapsulate the cross-over points").

See page 2, lines 15-25 of Applicants' specification.

From Applicants' disclosure as a whole, it would have been clear to one of ordinary skill in the art, as of the filing date of the present application, how to make and use the present invention. That is, as is clear from Applicants' disclosure as a whole, the second polymer material of the second segments, after being at least partially split from the first segments, is melted and flows to the cross-over points, and after solidifying achieves the structure, and advantages thereof, of the fiber-containing material according to the present invention.

The contention by the Examiner that Applicants do not "clearly describe how the second segment polymer can concentrate at the cross-over points" is respectfully traversed. As is clear from Applicants' disclosure as a whole, and as particularly seen from the above-referred-to portions of Applicants' original disclosure, after the splitting the second segment polymer material can then flow, upon melting, and is concentrated at the cross-over points. Applicants disclose processing to achieve this result, and thus it is respectfully submitted that Applicants provide an enabling disclosure to make and use the claimed invention.

The question by the Examiner as to what is done to the fabric so that the second segment will only be located at the cross-over points, is noted. It is respectfully submitted that, as is clear from the foregoing and from Applicants' original disclosure, with melting of polymer material of the second segments and resulting flow thereof, and with, for

example, the first segments retaining their solid form including cross-over points thereof, and after splitting at least partially the first and second segments, the flow of the melted polymer material of the second segments, is to the cross-over points, achieving the present invention.

Applicants' original disclosure shows such flow and the Examiner has provided no evidence or reasoning casting doubt on this description in Applicants' original disclosure. See, e.g., Figs. 9 and 10 and the description in Applicants' specification in connection therewith. Thus, the rejection under the first paragraph of 35 USC 112 is clearly improper. See In re Bowen, 181 USPQ 48 (CCPA 1974).

Applicants respectfully traverse the rejection of their claims under the second paragraph of 35 USC 112, as being indefinite, especially insofar as this rejection is applicable to the claims as presently amended.

In light of canceling of claims 1-8, it is respectfully submitted that bases for rejection of claims 1-8 are moot. Furthermore, in light of amendment to claim 29, the basis for rejection thereof as set forth in Item 11 on page 4 of the Office Action mailed February 14, 2001, is moot; that is, claim 29 is now clear that the "copolymer" is a copolymer of polyethylene terephthalate, and that the second polymer material can also be a polyamide.

Applicants respectfully traverse the rejection of claims 12 and 15 as set forth in Items 12 and 14 on page 4 of the Office Action mailed February 14, 2001, particularly insofar as the therein reasons are applicable to the claims as

presently amended. Thus, note that claims 12 and 15 respectively have been amended to recite the non-woven fabric and the multi-component fibers. Claim 12 is dependent on claim 11, which defines the material as a non-woven fabric; and claim 15 is dependent on claim 9, which recites that the fiber-containing material is made from a plurality of multi-component fibers. Particularly in view of the present amendments to claims 12 and 15, it is respectfully submitted that there is clear antecedent basis for the non-woven fabric and the multi-component fiber.

Applicants respectfully traverse the rejection of claim 13 as being indefinite, as set forth in Item 13 on page 4 of the Office Action mailed February 14, 2001. In particular, Applicants respectfully traverse the contention by the Examiner that is unclear how the second segments can be "completely melted" without forming a solid sheet or forming so many cross-over points that the fabric becomes a solid, stiff structure. It is respectfully submitted, however, that, according to the present invention, upon melting of the second polymer material of the second segment, the melted material flows, e.g., within the web of material and, for example, flows to the cross-over points of the first segments, as is clear from Applicants' original disclosure.

The question by the Examiner as to whether, when the melted second segment is cooled, it is still in the form of a filament or has the segment spread throughout the fiber-containing material, is noted. However, as is clear from Applicants' original disclosure, the melted second segment

flows (for example, draws back on itself) and concentrates at the cross-over points. Thus, as is clear from Applicants' original disclosure as a whole, including Fig. 10, the melted second segment after cooling (re-solidifying) is neither "in the form of a filament" or "has ... spread throughout the fiber-containing material".

Applicants respectfully traverse the conclusion by the Examiner in Item 15 on page 4 of the Office Action mailed February 14, 2001, that the term "completely split" is indefinite, particularly insofar as this term is utilized in claim 20 as presently amended. That is, claim 20 recites that the second segments "have been" completely split from the first segments, claim 9 reciting that the first and second segments have been at least partially split from each other. Such recitation as to the splitting of the first and second segments is in the nature of a product-by-process recitation, and it is respectfully submitted that the claims are consistent and definite in reciting, that the first and second segments have been at least partially split, and have been completely split, from each other, while further reciting that the second segments have been melted and are a binder of the fiber-containing material.

Applicants respectfully traverse the conclusion by the Examiner in Item 16 on page 5 of the Office Action mailed February 14, 2001, that claim 22 is indefinite. In particular, it is respectfully submitted that claim 22 clearly defines metes and bounds of the present invention, such that one of ordinary skill in the art would know whether a fiber-

containing material fell within or outside the scope of the present claims. Under the present circumstances, the second paragraph of 35 USC 112 requires nothing more. See In re Moore, 169 USPQ 236 (CCPA 1971).

The question by the Examiner as to how is it that second polymer material "concentrates" on specific cross-over points when the fiber-containing material is heated is noted. It is respectfully submitted that this question is not a proper question under the second paragraph of 35 USC 112, the sole issue thereunder, under the present circumstances, being definiteness. It is respectfully submitted that a concentration of the second polymer material would have a definite meaning in the art, such that claim 22 would not be indefinite.

In any event, as is clear from the foregoing and from Applicants' disclosure as a whole, it is respectfully submitted that the second polymer material "concentrates" upon melting the at least partially split second polymer material, whereby the molten second polymer material flows and, e.g., encapsulates the cross-over points. As is clear from Applicants' disclosure as a whole, and particularly, e.g., comparing Figs. 9 and 10, amount of second polymer material at the cross-over points is greater than elsewhere.

The questions by the Examiner as to what happens to the filaments composed of the second polymer material, and are there still filaments of both polymer materials, are noted. With complete melting of the second polymer material, with flow thereof, there essentially is in substance second polymer

material at the cross-over points; any unmelted second polymer material may remain as filaments.

The question by the Examiner concerning cross-over points densely formed throughout the web, so that everywhere there is a filament composed of the second segment a cross-over point forms, is noted. As is clear from the present claims and from Applicants' disclosure, the cross-over points are cross-over points of the first segments; it is respectfully submitted that the molten material (molten second polymer material, of the second segments) gathers at the cross-over points (potential bonding sites referred to on page 2, lines 9-11 of Applicants' specification) of the first segments, providing the bonding achieved according to the present invention.

Applicants respectfully traverse the rejection of claim 23 as being indefinite. In the following, the questions raised by the Examiner in Item 17 on page 5 of the Office Action mailed February 14, 2001, are answered. As to what happens to the second polymer material filaments, note that the second polymer material melts and this material, of the filaments, flows, providing the binding at the cross-over points of the first segments according to the present invention. As to whether there are still filaments of both materials or does the fabric become composed of the first segments that are bonded by the second segments, note that the fabric becomes composed of the first segments bonded by second polymer material, of the second segments, that concentrates at cross-over points of the first segments after melting of the second segments. The filaments of second polymer material

(that is, the second segments) that melt, will flow, to provide concentrations of second polymer material at the cross-over points; thus, the second polymer material filaments that are melted in essence are transformed.

The question by the Examiner as to whether the cross-over points are densely gathered throughout the web forming a stiff, solid structure, is noted. There is seen no basis for the Examiner to conclude that "a stiff, solid structure" is provided. To the contrary, and as is clear from Applicants' disclosure, through use of the present invention a fibrous material having improved strength (e.g., due to bonding at the cross-over points) and softness is achieved, with smaller amounts of adhesive placed at more bonding sites. Moreover, a more even appearance is achieved since more bonding sites are formed, with less wasted binder material.

As to whether the structure "still [comprises] the second polymer material anywhere else besides the cross-over points", note that according to the present invention at least some of the second polymer material gathers (is concentrated at) the cross-over points. There may still be other second polymer material (for example, where the second segments are not completely melted) at other locations beside the cross-over points. However, and as is clear from Applicants' disclosure as a whole, advantages of the present invention are achieved with, for example, concentration of second polymer material of the second segments, at the cross-over points.

As can be seen in the foregoing, Applicants provide answers, and responses, to questions and issues raised by the

Examiner in connection with the reasons for the rejection under the second paragraph of 35 USC 112. If any issue remains in connection with this basis for rejection of the claims, it is respectfully requested that the Examiner contact the undersigned, so as to overcome any remaining issues.

Applicants respectfully submit that all of the claims presented for consideration by the Examiner on the merits in the above-identified application, patentably distinguish over the teachings of the reference applied by the Examiner in rejecting claims in the Office Action mailed February 14, 2001, that is, the teachings of U.S. Patent No. 5,718,972 to Murase, et al.

It is respectfully submitted that the teachings of this applied reference does not disclose, nor would have suggested, such fiber-containing material as in the present claims, made from a plurality of multi-component fibers including, respectively, first and second segments having higher and lower melt temperatures, wherein these first and second segments have been at least partially split from each other and the second segments having been melted and being a binder of the fiber-containing material, the fiber-containing material having cross-over points of the first segments, where the first segments cross each other, and wherein the second polymer material, of the second segments, is concentrated at the cross-over points. See claim 9.

More specifically, it is respectfully submitted that the teachings of this applied reference would have neither taught nor would have suggested such fiber-containing material,

wherein the second polymer material, of the second segments, is evenly dispersed through the fiber-containing material, at the cross-over points of the first segments (see claim 61); or wherein the second polymer material, of the second segments, substantially encapsulates the cross-over points and is substantially only at these cross-over points (see claim 62; note also claim 23).

Furthermore, it is respectfully submitted that this reference as applied by the Examiner would have neither taught nor would have suggested such fiber-containing material as in the present claims, including the segments having been at least partially split and the second segments having been melted and being a binder, and wherein the segments have been at least partially split prior to the second segments having been melted. See claim 63.

In addition, it is respectfully submitted that the teachings of the applied reference would have neither disclosed nor would have suggested such fiber-containing material made from the plurality of multi-component fibers as in the present claims, each multi-component fiber including at least first and second segments and with the first segments having cross-over points with each other, and with the second polymer material, of the second segments, having been melted and being concentrated at the cross-over points to act as a binder of the fiber-containing material. See claim 30. Note also claim 31, reciting that the second polymer material is located substantially only at the cross-over points.

Furthermore, it is respectfully submitted that the

teachings of the applied reference would have neither disclosed nor would have suggested such fiber-containing material as in the present claims, made utilizing the processing steps as in claim 67, including, inter alia, with the plurality of multi-component fibers having the specified first and second segments, wherein the second segments are at least partially split from the first segments; and, after the splitting, thermally bonding the first segments, to form the fiber-containing material, by melting the second polymer material of the second segments. See claim 67.

Moreover, it is respectfully submitted that this applied reference would have neither taught nor would have suggested the fiber-containing material as in the present claims, made by the recited process, including wherein in the thermal bonding the second polymer material is melted so as to encapsulate the first segments at the cross-over points of the first segments (see claim 70).

The invention, as being considered on the merits in the present application, is directed to fiber-containing materials (for example, fibrous materials, such as woven fabrics, knit fabrics, yarns, webs and non-woven fabrics). It has long been desired to provide bonded fibrous materials, including non-woven materials, having increased strength and increased softness. According to various techniques for forming such bonded materials, a binder fiber is utilized having an adhesive sheath, which is softened so as to bind fibers thereto after the softened adhesive has hardened. Note, for example, page 1, line 19 to page 14, of Applicant'

specification. In this structure, there is excessive adhesive, and there is undesirable bonding of more than just the cross-over points (that is, potential bonding sites) of the structure.

It has also been known to use standard size binder fibers which are melted, forming melted adhesive, to provide the bonded structure. However, an excessive amount of binder at one spot occurs, as described in the paragraph bridging pages 2 and 3 of Applicants' specification.

Fiber structures composed wholly or in part of completely or partially split multi-component fibers were known, and it was known to bond the fibers at the points of intersection through application of heat. Note the last full paragraph on page 3, and the paragraph bridging pages 3 and 4, of the present specification.

However, it was still desired to provide fibrous material having both improved strength and softness, with less wasted binder material.

Against this background, Applicants provide such fiber-containing material having the desired improvement in both strength and softness simultaneously, and further with less wasted binder material and a more even distribution of binder. Applicants have found that by utilizing multi-component fibers including at least first and second segments respectively of first and second polymer materials of different melt temperatures, with the segments being at least partially split from each other and then the lower melt temperature polymer material (that is, polymer material of the second segments)

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being melted to provide a binder of the fiber-containing material, the melted second polymer material, of the second segments, being concentrated at the cross-over points of the first segments of first polymer material of higher melt temperature upon cooling (re-solidifying) of the second polymer material, objectives according to the present invention are achieved. That is, a fiber-containing material of high strength and good softness is achieved. With the binding polymer material, of the second segments, being melted and concentrating at the cross-over points of the first segments, improved strength is achieved. In addition, with the concentrating of the melted second polymer material at the cross-over points, there is less binder material waste; and, moreover, softness is improved. Furthermore, because more bonding sites are formed, e.g., at the cross-over points of the first segments, a more even appearance is achieved. Note, in particular, the sole full paragraph on page 24, and the paragraph bridging pages 24 and 25, of Applicants' specification. Note also the paragraph bridging pages 8 and 9 of Applicants' specification.

Murase, et al. discloses non-woven fabric made of fine denier filaments, the filaments being composed of bicomponent conjugate filaments. The bicomponent conjugate filaments are composed of a thermoplastic polymer component A and a thermoplastic polymer component B insoluble in the component A and having a melting point higher than that of the component A by 30° to 180°C, and in which at least the component A is exposed on a surface of the bicomponent conjugate filaments. — PK

Heat bonded areas are formed by heat bonding the bicomponent conjugate filaments mutually to one another, the heat bonded areas being provided with a certain space between one heat bonded area and another by softening or melting only the component A of the bicomponent conjugate filament. Non heat bonded areas, without heat bonding the conjugate filaments, are also formed. See from column 2, line 55 to column 3, line 6. Note also column 6, lines 19-25, describing that heat is applied to predetermined areas of the web in the thickness direction of the web, with only the component A of the bicomponent conjugate filaments in the predetermined areas being softened and molten, whereby the bicomponent conjugate filaments are heat bonded to form the heat bonded areas, the predetermined (heat bonded) areas being provided with a certain space between one area and another. Note also column 6, lines 61-64, describing that the heat bonded areas occupy 5-50% of the entire area of the obtained non-woven fabric. Note also column 7, lines 5-61, disclosing that after heat bonding the formed fleece is then subject to wrinkling or any other method for splitting the bicomponent conjugate filaments.

Initially, note that Murase, et al. discloses that a component A is softened or molten; it is respectfully submitted that this patent does not disclose, nor would have suggested, importance of melting the lower melt temperature segments. Moreover, particularly noting that Murase, et al. does not even require melting, disclosing use of softening or melting, it is respectfully submitted that this patent does

not disclose, nor would have suggested, the presently claimed product, including melting of the second segments such that the melted second polymer material is concentrated at the cross-over points of the first segments of the first polymer material of higher melt temperature, achieving the advantages of both strength and softness according to the present invention.

In addition, it is emphasized that according to Murase, et al., the segments are split after heat bonding. It is respectfully submitted that such disclosure would have neither taught nor would have suggested the structure achieved according to the present invention, including wherein the first and second segments are initially split and then melting of the low melting material second segments is performed. As indicated in the foregoing, by first at least partially splitting the first and second segments and thereafter melting the polymer material of the second segments, the desired concentration at the cross-over points is achieved. It is respectfully submitted that such structure would not be achieved according to Murase, et al., having limited bonding areas (e.g., 5-50% of the entire area of the obtained non-woven fabric) and having the splitting performed after heat bonding of the limited area.

It is again emphasized that according to Murase, et al. a limited area is heat bonded, whereby heat bonded areas are spaced from each other. Compare with the present invention, having the cross-over points, and binder provided thereat, distributed evenly and thoroughly throughout the material. As

can be appreciated, the even and thorough distribution provides improved strength and softness, and provides a more even appearance, as described in the paragraph bridging pages 8 and 9 of Applicants' specification. It is respectfully submitted that Murase, et al. would have neither taught nor would have suggested, and in fact would have taught away from, the presently claimed invention, including the concentration of second polymer material at the cross-over points of the first segments, much less encapsulation of these cross-over points with the second polymer material, achieved, e.g., by the processing specified according to the present claims.

The Examiner contends that, according to Murase, et al., the fabric produced is bonded together "by heating the lower melting point component to bond the fibers together". It is respectfully submitted, however, that the present invention achieves the claimed structure through melting the lower melting point polymer of the second segments, after at least partially splitting the first and second segments. As correctly interpreted by the Examiner, according to Murase, et al., "[after the fabric is heated the conjugate fibers are split to form filaments from both components" (emphasis added). It is respectfully submitted that, even as interpreted by the Examiner, wherein filaments are formed from both components, and with splitting after heating the fabric, such disclosure would have taught away from the present invention including concentration of the second polymer material at cross-over points.

Applicants traverse the conclusion by the Examiner of

obviousness of claims 10 and 21, as set forth in Item 21 on page 8 of the Office Action mailed February 14, 2001. Note that Murase, et al. discloses production of non-woven material. It is respectfully submitted that such express and limited disclosure of non-woven material would have neither taught nor would have suggested, and in fact would have taught away from, the presently claimed subject matter, as in claims 10 and 21, including the yarn and staple fibers.

In view of the foregoing comments and amendments to the claims, reconsideration and allowance of all claims being considered on the merits in the above-identified application, is respectfully requested.

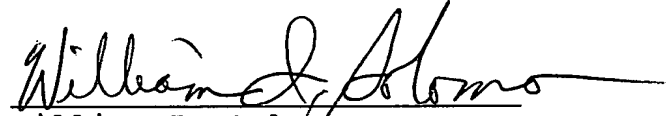
Attached hereto is a marked-up version of the changes made in the claims by the current Amendment. This marked-up version is on the attached pages, the first page of which is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE".

To the extent necessary, Applicants petition for an extension of time under 37 CFR § 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to the Deposit

Account No. 01-2135 (Case No. 709.36924X00) and please credit
any excess fees to such Deposit Account.

Respectfully submitted,

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A handwritten signature in cursive script, appearing to read "William I. Solomon", written over a horizontal line.

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Please cancel claims 1-8, 22 and 55-60 without prejudice or disclaimer, and amend the claims remaining in the application as follows:

9. (Amended) Fiber-containing material made from a plurality of multi-component fibers, each multi-component fiber including at least first and second segments, the first and second segments being made respectively of a first polymer material and a second polymer material different from the first polymer material, the first polymer material having a higher melt temperature than that of the second polymer material, the first and second segments [being] having been at least partially split from each other, the second segments having been melted and being a binder of the fiber-containing material, wherein the fiber-containing material has cross-over points of the first segments, where the first segments cross each other and wherein the second polymer material, of the second segments, is concentrated at the cross-over points.

12. (Amended) Fiber-containing material according to claim 11, wherein the non-woven fabric has a weight of 0.1 to 40 ounces per square yard.

15. (Amended) Fiber-containing material according to claim 9, wherein the multi-component fibers are microfibers.

20. (Amended) Fiber-containing material according to claim 9, wherein the second segments [are] have been completely split from the first segments.

23. (Amended) Fiber-containing material according to claim [22] 9, wherein the second polymer material, of the second segments, is substantially only at the cross-over points.

29. (Amended) Fiber-containing material according to claim 9, wherein the first polymer material is selected from the group consisting of polyethylene terephthalate, polylactic acid, poly-cyclohexylene dimethylene terephthalate, and polyamides, and the second polymer material is selected from the group consisting of high density polyethylene, linear low density polyethylene, polypropylene, polylactic acid, [copolymers of polyethylene terephthalate and polyamides,] copolymers of polyethylene terephthalate, and polyamides, the first and second polymer materials being selected such that the melt temperature of the first polymer material is higher than that of the second polymer material.

30. (Amended) Fiber-containing material made from a plurality of multi-component fibers, each multi-component fiber including at least first and second segments, the first and second segments being made respectively of a first polymer material and a second polymer material different from the first polymer material, the first polymer material having a

higher melt temperature than that of the second polymer material, the first segments of the plurality of multi-component fibers having cross-over points with each other, and wherein second polymer material, of the second segments, [is] having been melted and being concentrated at the cross-over points to act as a binder of the fiber-containing material.